

Response to Comments on Public Notice NPDES Permit and Final Determinations
for Honouliuli Wastewater Treatment Plant
NPDES Permit No. HI 0020877
February 28, 2014

Comments received by the U.S. Environmental Protection Agency, Region 9

Thank you for the opportunity to review and comment on the draft permit (NPDES Permit No. HI0020877) for the discharge from the Honouliuli WWTP to Mamala Bay, which was public-noticed on November 13, 2013. We strongly support the draft permit. The draft permit appropriately includes secondary treatment requirements, which will establish discharge control expectations of the permittee that are consistent with national requirements for other POTW wastewater discharges. Additionally, the draft permit includes updated requirements for toxicity, bacteria, and nutrients that are consistent with NPDES permitting regulations and will provide water quality protection for Mamala Bay.

Comments received from the City and County of Honolulu, Department of Environmental Services

FACT SHEET

1. Page 6, Table F-2 – The requirement of the 2010 consent decree is not less than 60 percent removal efficiency from the influent stream for Total Suspended Solids.

Response: The fact sheet was revised as requested.

2. Page 14, Item (3), 3rd paragraph – The Fact Sheet incorrectly references the Tentative Decision Document (TDD) rather than the Final Decision Document (FDD) which was issued on January, 2009.

The Fact Sheet reference to the time period used in EPA's dilution assessment is incorrect and should be corrected. The FDD, on page 23, states that the assessment of the 27 receiving water temperature and salinity depth profiles included 4 profiles from the early 1970s, 4 profiles from 1993 through 1994, and 19 profiles from February 2000 through November 2005.

Response: The fact sheet was revised as requested.

3. Page 14, Item (3), 4th paragraph – As part of the permit application review process, the City submitted an updated dilution Technical Memorandum (TM) dated August 2, 2013. The August dilution TM provides rationale for using the 90th percentile on effluent salinity for the Visual Plume model input. The 90th percentile provided the same salinity value as the calculated maximum effluent salinity input.

Response: All pertinent information for the reissuance of the permit should have been submitted with the permit application. The TM dated February 1, 2013 was partially considered and applied to the fact sheet, contributing to a delay in the issuance of this permit. However, the DOH will not consider the August 2, 2013 TM

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at this time in order for the processing of this permit to progress in a timely manner. If applicable, the City may submit the study for compliance with this permit and if appropriate, the City may request a modification to this permit.

4. Page 15, last paragraph and pages 17-23 – The average dilution 472:1 as cited in the Fact Sheet and used in the draft permit is incorrect. The February and August 2013 TMs both specify an average dilution of 582.5:1 (design flow, no reuse).

Response: As stated in the fact sheet, the average dilution of 582.5:1 was not considered for this permit because it was based on an adjusted design flow that excluded reuse water. The *State Toxics Control Program: Derivation of Water Quality-Based Discharge Toxicity Limits for Biomonitoring and Specific Pollutants* (STCP) does not provide for adjusting a facility's design flow based on reuse.

5. Pages 16 & 17, Table F-6 – The dilution values (i.e. 117:1 and 411:1) reported in Table F-6 and used in the RPA calculations are incorrect. The dilution TMs submitted by the City specify a critical dilution of 144:1, an average dilution of 582.5:1, and a geometric mean dilution of 530.6:1 and should be used in the development of the permit as stated in the Fact Sheet.

Response: The dilutions values in the table were corrected to 144 and 472. See previous response.

6. Page 18, item (c), 1st paragraph – It is inappropriate to compare the HWWTP effluent enterococcus concentration multiplied by the initial dilution to the recommended State water quality standard single sample max (501 cfu/100 mL) and applicable geometric mean criteria (i.e. 35 cfu/100 mL) for receiving waters. A geometric mean should be calculated using the effluent enterococcus concentrations measured in a calendar month multiplied by the appropriate dilution factor, at the edge of the ZOM.

Response: The fact sheet did not compare the HWWTP effluent enterococcus concentration multiplied by the initial dilution to the recommended State water quality standard single sample max (501 cfu/100 mL) and applicable geometric mean criteria (i.e. 35 cfu/100 mL) for receiving waters. It is inappropriate to calculate a geometric mean using the effluent enterococcus concentrations measured in a calendar month multiplied by the appropriate dilution factor, at the edge of the ZOM.

7. Pages 20-23 – Using the current State Water Quality Standards on Human Health is inappropriate for the carcinogenic compounds dieldrin, chlordane and DDT. The water quality criterion for chlordane, dieldrin and DDT was based on human health using carcinogenic endpoints in the calculation. This calculation is conservative in terms of cancer potency and bio-concentration factors.

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On June 16, 2009, the Governor of the State of Hawaii signed legislation that conforms the State Water Quality Standards for chlordane and dieldrin to the current federal standards as set forth in the latest EPA National Recommended Water Quality Criteria (Office of Science and Technology, 2002 & 2006) which incorporate over 20 years of nationwide scientific research concerning the carcinogenicity of toxic pollutants.

Response: The RPA and effluent limitations are based on the applicable water quality standards specified in HAR 11-54 and remain applicable until HAR 11-54 is revised to reflect any updated standards.

8. Pages 20-23 – In December 2009, the Hawaii State Department of Health amended the State water quality standards (HAR 11-54-4(b)(3)) for chlordane and dieldrin through its rulemaking process. This amendment was approved by the Governor on January 25, 2010 and submitted to EPA for its approval on February 16, 2010. Ignoring both DOH's rule making and the State's position on water quality standards to develop water quality based effluent limits in the draft permit for chlordane and dieldrin is inappropriate and irrational.

Response: The RPA and effluent limitations are based on the applicable water quality standards specified in HAR 11-54 and remain applicable until HAR 11-54 is revised to reflect any updated standards.

9. Page 20, item (a) – Reasons why reasonable potential does not exist for chlordane and why there should not be an effluent discharge limitation for chlordane are provided in Attachment A.

Response: The 303(d) list may not reflect water quality within the immediate vicinity of the outfall and does not account for toxic parameters. Reasonable potential for chlordane was determined in accordance with the TSD. Also see response to comments 7 and 8.

10. Page 21, item (b) – Reasons why reasonable potential does not exist for dieldrin and why there should not be an effluent discharge limitation for dieldrin are provided in Attachment A.

Response: The 303(d) list may not reflect water quality within the immediate vicinity of the outfall and does not account for toxic parameters. Reasonable potential for dieldrin was determined in accordance with the TSD. Also see responses to comments 7 and 8.

11. Page 24, item (c) – Reasons why reasonable potential does not exist for DDT and why there should not be an effluent discharge limitation for DDT are provided in Attachment A.

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Response: The 303(d) list may not reflect water quality within the immediate vicinity of the outfall and does not account for toxic parameters. Reasonable potential for DDT was determined in accordance with the TSD. Also see responses to comment 8.

12. Page 24, Item (e)(1)(1) - The review of EPA's 303(d) list should be for ammonia nitrogen, not nitrate + nitrite.

Response: The fact sheet was revised as requested.

13. Page 24 – The determination that a reasonable potential exists to exceed water quality standards for ammonia nitrogen is contradicted by the fact that the receiving water is not impaired. As the Fact Sheet, page 5, acknowledges “CWA Section 303(d) requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources.” Treated effluent is discharged to the Pacific Ocean from the Barber's Point Ocean Outfall Serial No. 001 through a diffuser approximately 8,760 feet offshore and 200 feet below the water. The location of the Barber's Point Outfall Serial No. 001 in the Pacific Ocean is not listed as an impaired water body in the 2012 State of Hawaii Water Quality Monitoring and Assessment Report: Integrated Report to the U.S. Environmental Protection Agency and the U.S. Congress pursuant to Sections 303(d) and 305(b), Clean Water Act. TMDLs are the process for evaluating the causes of any impairment. No TMDLs have been established or are contemplated for this water body.

Additional reasons why ammonia nutrient discharge limitation should be deleted are presented in Attachment A

Response: The 303(d) list may not reflect water quality within the immediate vicinity of the outfall. Reasonable potential was based on the monitoring results at the boundary of the Zone of Mixing, where water quality standards should be met. Monitoring results at the boundary of the Zone of Mixing for HWWTP showed exceedances of the water quality standards for ammonia nitrogen, therefore establishing reasonable potential.

14. Pages 26-29 – There is no basis for establishing effluent limitations for enterococcus at the HWWTP. The enterococcus effluent discharge limitation and the provision to upgrade the Honouliuli WWTP to comply with the final enterococcus discharge limitation should be deleted. (See Attachment A.)

Response: As stated in the Fact Sheet, Section 3.3 of EPA's Technical Support Document for Water Quality-Based Toxics Control states that the regulatory authority should consider additional information discussed under Section 3.2 (i.e., type of industry, type of POTW, type of receiving water and designated uses, etc.) when evaluating reasonable potential. Reasonable potential can be

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determined without effluent or receiving water exceedances of applicable water quality criteria. Because the facility is a POTW, and pathogens are characteristic of treated municipal wastewater, and the beneficial uses of the receiving water include recreation where human contact may occur, reasonable potential for enterococcus has been determined.

15. Page 27, last paragraph and Page 28, 1st paragraph – Compliance with the applicable State Water Quality Standards begins at the boundary of or outside the boundary of the ZOM. The specific water quality criteria set forth in the draft permit's ZOM table may be exceeded within the boundaries of the ZOM and shall not constitute a violation of this permit. Therefore, in establishing any WQBEL when reasonably justified, it is appropriate that the dilution at the Zone of Mixing boundary be applied in the calculation.

Using the minimum dilution of 144:1 is inappropriate for the following reasons:

- 1) Compliance with the State Water Quality Standards is determined at the edge of the ZOM and beyond and therefore the applicable dilution is the dilution at the edge of the ZOM. Significant additional mixing occurs between the initial dilution at the diffusers and at the edge of the ZOM. At the ZOM the EPA Visual Plume model predicted an average dilution of 582.5:1, and geometric mean dilution of 530.6:1; and
- 2) The Visual Plume model predicted that the minimum dilution of 144:1 occurs at a depth of 165 feet which is beyond the depths that anyone would be recreating in waters near the ZOM.

Response: The requirement remains as written in the draft permit. Although human contact with the receiving water may be infrequent, human contact within the zone of mixing may occur, thus for the protection of human health due to the potential for acute illness from pathogens the initial dilution was determined to be appropriate. The use of the initial dilution is intended to be protective of water quality standards, beneficial uses, and human health. Human health may be impacted from short term exposure to elevated concentrations of pathogens, thus the provided dilution must be conservative to account for all reasonable discharge scenarios.

16. Page 30, item h – DOH should not consider using *Tripneustes gratilla* exclusively for the Whole Effluent Toxicity Test. Including *Ceriodaphnia dubia* along with *Tripneustes gratilla* will provide a broader evaluation of the whole effluent toxicity profile of the effluent.

Response: As documented in the Fact Sheet, based on approximately 5 years of data, there is no reasonable potential for *Ceriodaphnia Dubia* to exceed the whole effluent toxicity limitations. Therefore testing requirements for *Ceriodaphnia Dubia* was removed.

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17. Page 31, last paragraph, 1st sentence – Revise “The acute and chronic biological effect levels (b values of 20% and 25%, respectively) incorporated into the TST define EPA’s unacceptable risks to aquatic organisms” to “The acute and chronic biological effect levels (effect levels of 20% and 25%, respectively or b values of 0.80 and 0.75, respectively) incorporated into the TST define EPA’s unacceptable risks to aquatic organisms. Reference is EPA833-R-10-004, June 2010.

Response: The fact sheet was revised as requested.

18. Pages 33-34, Table F-8 – Footnote 5 - remove references to “2,4-DDT, 2,4-DDE and 2,4’-DDD.”

40 CFR 136 only includes approved analytical methods for DDT 4-4’-isomers, and not for DDT 2,4’-isomers. Therefore, the 2,4’-isomers are not Clean Water Act analytes and should not require monitoring.

Response: The fact sheet was revised as requested.

19. Page 35, Table F-9 – It is inappropriate to directly compare HWWTP effluent sampling results to State Water Quality Standards which apply to the receiving waters.

Response: Table F-9 was intended for informative purposes.

20. Page 36, Table F-10 – The dates in Section 2.a and Table F-10, Notice 1, are inconsistent for the period of data review and calculated geometric mean.

Response: The data used was from sampling conducted from July 2007 through October 2012. The fact sheet was revised to reflect this clarification.

21. Page 40, section c – This draft public notice permit is not a CWA Section 301(h) modified permit; therefore the requirement to monitor at the Zone of Initial Dilution (ZID) is no longer applicable. The provisions to establish monitoring at the ZID and to determine compliance at the edge of the ZID are therefore inappropriate and should be removed.

Response: Although this permit is not considered a 301(h) modified permit, the facility has not been upgraded and does not achieve secondary treatment standards, as required by Section 301 of the Clean Water Act and defined in 40 CFR Part 133. Therefore requirements from the previous permit were retained.

22. Page 41, Item (1)(1)(a) – Delete the word “indicate”.

Response: The fact sheet was revised as requested.

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23. Page 41, Item (1)(b) – Delete the requirement for the ZOM Dilution Analysis Study because:

- i) The City has submitted dilution TMs that provide the critical dilution and dilution at the Zone of mixing, and
- ii) The City has demonstrated that there is assimilative capacity in the receiving waters by showing compliance with ammonia nitrogen at the edge of the Zone of Mixing using DOH methodology (See Attachment A).

Response: All pertinent information for the reissuance of the permit should have been submitted with the permit application. The critical dilution presented in the TM dated February 1, 2013 was considered and applied to the fact sheet. However, the average dilution was not used because it was based on an adjusted design flow that excluded reuse water. The STCP does not provide for adjusting a facility's design flow based on reuse. The DOH did not consider the August 2, 2013 TM at this time in order to for the processing of this permit to progress in a timely manner. If applicable, the City may submit the TM for compliance with the ZOM Dilution Analysis Study and if appropriate, the City may request a modification to this permit.

24. Page 42, Item (2) – change “probably” to “probable.”

Response: The fact sheet was revised as requested.

25. Page 44, Item 1 – Remove chlordane, dieldrin and DDT from the influent monitoring program. Chlordane, dieldrin and DDT have no reasonable potential to cause an exceedance of the State water quality standards. Influent monitoring for chlordane, dieldrin, and DDT has been established in the draft permit in order to determine if they are present in the influent in elevated concentrations. Also see comments # 7, 8, 9, 10, 11 and 35.

Response: Reasonable potential for chlordane, dieldrin and DDT to exceed water quality standards was established in the fact sheet. The RPA and effluent limitations are based on the applicable water quality standards specified in HAR 11-54 and remain applicable until HAR 11-54 is revised to reflect any updated standards. See responses to comments 7, 8, 9, 10, 11, and 35.

26. Page 45, Item 4.a – Change “visual observations when of the shoreline” to “visual observations of the shoreline.”

Response: The fact sheet was revised as requested.

27. Page 47, Item e (Fish Monitoring) – Rename Stations FR1-B and FR2-B to FR3 and FR4, respectively.

Response: The Stations shall remain FR1-B and FR2-B for historical purposes.

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28. Page 47, Item e (ZOM Dilution Analysis Study) – See comment # 23 on the City’s request to delete ZOM Dilution Analysis Study.

Response: See response to comment 23.

29. Page 48, item 4.a, 2nd paragraph – Delete the requirement to implement and update a BMP-based program for controlling animal and vegetable oil and grease. The existing Honouliuli permit does not have a requirement to implement and update a BMP-based program for controlling animal and vegetable oil and grease.

Response: Although the previous permit did not have this requirement, it has been added to this permit because the facility does not achieve secondary treatment standards, as required by Section 301 of the Clean Water Act and defined in 40 CFR Part 133. In addition, the service area has become substantially more urbanized during the more than 20 years since the previous permit was written.

30. Page 49, Item 5.a – Under the existing NPDES permit, the City submitted its Annual Assessment Report by June 30 of the following year for the calendar year in review. As the Annual Assessment Report will be replaced by the Water Pollution Prevention Program Annual Report, the City requests that June 30 be the report deadline.

Response: The deadline has been revised as requested.

DRAFT PERMIT

31. Page 1 – The Permittee is the City and County of Honolulu, Department of Environmental Services. The signature block should read:

“Director, Department of Health
State of Hawaii.”

Response: The reference to the City and County of Honolulu as Permittee was changed as requested. The signature block remains the same as this is standard with all NPDES permits issued by the Department of Health.

32. Page 3, Part A, 1st Table – The first table requires a footnote that references the 2010 Consent Decree Interim Discharge limits for the discharge parameters of BOD and TSS.

The required Measurement Frequency for BOD and TSS is “Daily”.

Response: The permit must contain secondary treatment requirements as required by Section 301 of the Clean Water Act and described in 40 CFR Part 133. The Consent Decree is a stand-alone document and should not be referenced in

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the permit since it allows for less than secondary treatment. The measurement frequency was revised to “Daily” as requested.

33. Page 3 and 4, Part A, first three tables – Loading units are lbs/day; however, DMR forms use kg/day. Please ensure consistency between the permit and the DMRs.

Response: DMRs are coded to match NPDES permits after they are issued to account for any changes in the permit conditions. Therefore the units for loading will remain as lbs/day.

34. Page 3, A.1., 2nd Table of Effluent Limitations and Monitoring Requirements – Delete discharge limitations for enterococcus. It is inappropriate and unjustifiable for the Department of Health to impose numerical effluent limitations for Enterococcus. Correcting the reasonable potential analysis demonstrates that there is no reasonable potential for the Honouliuli discharge to cause or contribute to exceedances of State WQS. See comments # 6 and 14 above and Attachment A.

Response: See responses to comments 6 and 14.

35. Page 3, A.1., 2nd Table of Effluent Limitations and Monitoring Requirements – Delete discharge limitations and monitoring requirements for chlordane, dieldrin, and DDT. Correcting the reasonable potential analysis demonstrates that there is no reasonable potential for the Honouliuli discharge to cause or contribute to exceedances of State WQS. See comments # 7 and 8 above and Attachment A.

Response: See responses to comments 7 and 8.

36. Page 3, A.1., 2nd Table of Effluent Limitations and Monitoring Requirements – Delete the discharge limitations for ammonia nitrogen. It is inappropriate and unjustifiable for the Department of Health to impose numerical effluent limitations for ammonia nitrogen. Correcting the reasonable potential for the Honouliuli discharge of nutrients to cause or contribute to an exceedance of State WQS. See Attachment A for additional reasons why there are no reasonable potential concerns.

Response: See response to comments 13 and 23.

37. Pages 3-4, Part A, 2nd table – Under Chronic Toxicity, delete “TUc” from the “Units” column since the test result is either a “Pass” or “Fail”.

Footnote 4 – Correct to remove reference to “2,4-‘DDT; 2,4-‘DDE and 2,4-‘DDD.” See comment # 18 above.

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Footnote 8 – Delete the requirement to sample between 12 noon to 3:00 pm to obtain a grab sample; there is no rational basis for this requirement.

Footnote 10 – There is a typographical error. Correct “total nitrogen” to “total oil and grease.”

Response: The permit was revised as requested.

38. Page 4, Table – For Total Oil and Grease (TOG) and Total Petroleum Hydrocarbons (TPH), replace “24-hour composite sample” with “grab” as the sample type. Grab sampling is the appropriate sample type.

Response: The permit was revised as requested.

39. Page 5, Item 5.b - Change language “where a representative samples...” to “...where representative samples...”

Response: The permit was revised as requested.

40. Page 5, Item 6.a – Delete the requirement for interim effluent limitations for enterococcus. See comments #14 and 34 above and Attachment A.

Response: See responses to comments 14 and 34. Interim limitations based on treatment plant performance were established in the compliance schedule to provide the City more time to comply with the limitation.

41. Page 5, Item 6.b – Delete the requirement for final effluent limitations for enterococcus, all tasks and compliance dates related to the requirement, and the compliance schedule for enterococcus including the compliance dates. There is no reasonable potential concern to establish WQBEL for enterococcus. The discharge complies with the applicable water quality standards. Also comments #14 and 34 and Attachment A.

Response: See responses to comments 14, 34 and 40.

42. Page 7, Part B.1, 2nd paragraph – Delete “communicate all attempts to the Director, and report all attempts on the DMR for that monitoring period.” And add a period after “efforts.” The reporting requirement is covered on page 12, Part B, Item 7.b.

Response: The language in Part B.1 remains the same because it further clarifies what is required to be reported in addition to test results.

43. Page 7, Part B.2 – Replace entire paragraph with the following language:

“The Permittee shall conduct chronic toxicity testing on: specified:

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- (1) *Ceriodaphnia dubia* using Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Fresh Organisms (EPA-821-R-02-013, 4th edition, October 2002; and
- (2) *Tripneustes gratilla* using Tropical Collector Urchin *Tripneustes gratilla* Fertilization Test Method, (EPA/600/R-12/022) April 2012 and follow Quality Assurance procedures as described in the test methods manual Sort-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPA/600/R-95/136, 1995)."

Response: See response to comment 16.

44. Pages 7-8, Part B.3. – The paragraph is incorrect in stating that there is a WET permit limitation. The results are either a "Pass" or "Fail." Revise language for B.3 as follows:

Chronic WET Permit Toxicity

The Test of Significant Toxicity (TST), as described in EPA 833-R-10-004 (June 2010), shall be used to demonstrate no unacceptable level of chronic toxicity at the In-stream Waste Concentration (IWC). The chronic toxicity criterion is expressed using a regulatory management decision (b value) of 0.75 for chronic toxicity where, a 25% mean effect (or more) at the In-stream Waste Concentration (IWC) demonstrates an unacceptable level of chronic toxicity.

For Outfall Serial No. 001, the applicable Instream Waste Concentration (IWC) is 0.70%.

For any one chronic toxicity test, the chronic WET permit limit that must be met is rejection of the null hypothesis (Ho):

A test result that rejects this null hypothesis is reported as "Pass" on the DMR form. A test result that does not reject this null hypothesis is reported as "Fail" on the DMR form. To calculate either "Pass" or "Fail", the permittee shall follow the instructions in National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document, Appendix B (EPA 833-R-10-004, June 10, 2010). If a test result is reported as "Fail", then the permittee shall follow Part B.6 (Accelerated Toxicity Testing and TRE/TIE Process) of this permit.

Response: The language in Part B.3 remains the same to be consistent with WET requirements in other permits.

45. Page 8, Part B.4.b – Delete paragraph and replace with the following: "This discharge is subject to a determination of "Pass" or "Fail" from a single-effluent concentration chronic toxicity test at the IWC, see National Pollutant Discharge

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Elimination System Test of Significant Toxicity Document, Appendix B. During Step 6 of Appendix B, the Permittee shall use an alpha value of 0.20 for *Ceriodaphnia dubia* and 0.05 for *T. gratilla*. The chronic IWC for Outfall Serial No. 001 is 0.70 percent effluent.”

Response: The language in Part B.4.b shall remain the same. See response to comment 16.

46. Page 8, Part B.4.c – Delete entire paragraph and replace with the following:
“Control and dilution water should be receiving water or lab water, as described in the test methods manual. If the dilution water is different from test organism culture water, then a second control using culture water shall also be tested.

Response: The language in Part B.4.c shall remain the same.

47. Page 9, Part B.4 – Change paragraphs “f” and “g” paragraphs to “g” and “h”, respectively. Add a new paragraph “f” with the following language: “Reference toxicant tests must meet the percent minimum significant difference (PMSD) criteria for *Ceriodaphnia dubia* found in Table 3-6 of Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the national Pollutant discharge Elimination System Program (EPA 833-R-00-003, June 2000).”

Response: See response to comment 16.

48. Pages 9-12, Part B – The paragraph is incorrect in stating that there is a WET permit limitation. The results are either a “Pass” or “Fail.” The language should be corrected as follows:

Page 9, B.5, Introductory paragraph: Replace “toxicity is measured above the chronic WET permit limit” with “a test result is reported as “fail”.

Pages 9-10, B.6.a, B.6.b and B.6.c: Replace the various references “if the chronic WET permit limitation is exceeded”, “exceeding the chronic WET permit limit” and “exceeds the chronic WET permit limitation” with “a test result is reported as “Fail”.

Page 8, B.6.a: Replace the last sentence “If the additional toxicity test does not exceed the chronic WET permit limitation, then the Permittee may return to the regular testing frequency” with “If the additional toxicity testing is subject to a determination of “Pass”, then the Permittee may return to the regular testing frequency”.

Response: The language shall remain as written to be consistent with WET requirements in other permits.

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49. Pages 10-11, Part B, Item 6.e – Delete “The TIE plan, at a minimum, shall:”, corresponding items (1) through (10), and replace the last two sentences with the following: “The Permittee shall incorporate all comments received from the Director with 14 days of receiving comments and commence with the TIE.”

Response: The language in Part B.6.e remains as written because the Permittee is solely responsible in identifying toxicity in their own effluent to comply with their NPDES permit conditions and HAR 11-54. The permit contains 10 minimum requirements to help the City develop the TIE plan.

50. Page 11, Item 7.a – The text following the word “Fail” are inappropriate for this section and therefore should be deleted. The WET test result of either a “Pass” or “Fail” is the outcome of the TST and will be reported in the DMR.

Response: The language shall remain as written to be consistent with WET requirements in other permits.

51. Page 12, Item 7.c – Change from “within five (5) calendar days” to “within five (5) working days.” The reason for this change is that it will be difficult to meet the calendar deadline for the written submission if there is a weekend or an observed holiday.

Response: This part was changed from “within five (5) calendar days” to “within five (5) business days.”

52. Page 13, Part C, Item C.1 – The title to Part C, Item C is inappropriate because the entire section does not come from the recreational waters section under HAR 11-54. Item 1 is the only section that deals with HAR 11-54-8(b) specific criteria for marine recreational areas. This section should be deleted from the permit, in light of pending and future revisions to the State Water Quality Standards during the permit term.

Response: There is no Part C, Item C. The labeling for Part C and its subparts are appropriate.

53. Page 13, Part C, Item C.2 – Delete the entire contents of this section and replace with the following language, “The discharge shall comply with applicable water quality standards for receiving waters adopted by the DOH under HAR, Chapter 11-54, Water Quality Standards, effective October 21, 2012 or as amended.”

Response: The language in this section remains as written, except that the most recent version of Chapter 11-54 was updated to December 6, 2013. Permit requirements must be based on regulations that are in effect to ensure that the

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general public has an opportunity to comment on all permit conditions during the public notice comment period prior to the issuance of a permit.

54. Delete the Zone of Initial Dilution (ZID) limitations entirely. Compliance monitoring at the ZID is only required under a 301(h) waiver NPDES permit. Turbidity and dissolved oxygen are monitored at the ZOM stations and as set forth in the permit on the Table on Page 20.

Response: Although this permit is not considered a 301(h) modified permit, the facility has not been upgraded and does not achieve secondary treatment standards, as required by Section 301 of the Clean Water Act and defined in 40 CFR Part 133. Therefore requirements from the previous permit were retained.

55. Page 18, 1st Table – Latitude and longitude coordinates for Shoreline Water Quality Monitoring has been rounded and do not include the nearest 10th decimal place. This will result in inaccurate sampling locations. Latitude and longitude coordinates precise to the 10th decimal place should be included in the permit. Please see Attachment B “Receiving Water Quality monitoring Program, Barbers Point Ocean Outfall.”

Response: The coordinates were revised as requested.

56. Page 18, Part E.1 – Include a new paragraph following the footnote to the second table in Part E.1 with the following language, “Inability to conduct shoreline monitoring due to inclement weather or hazardous conditions which may endanger the lives of the facility’s personnel shall not constitute a violation of this permit.”

Delete last paragraph which starts with “Monitoring results shall...” Reporting requirements for the shoreline water quality monitoring are listed in the table on Page 50.

Response: The sentence regarding inability to conduct shoreline monitoring was included in the permit as requested. The last paragraph which starts with “Monitoring results shall...” shall remain as written because it further explains what is required in the DMR submittal in relation to this section.

57. Page 19, Part E.2, 1st paragraph – Remove the requirement to have near shore sampling stations established within 300 meters of the shoreline for the following reasons:

First, the City cannot establish nearshore water quality stations within 300 meters of the shoreline because the U.S. Navy enforces a prohibitive danger zone under 33 CFR §334.1360 extending approximately 600 meters from the shoreline along the southerly boundary of the Naval Air Station, Barbers Point (see Attachment C).

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Response: Nearshore sampling requirements have been removed as requested.

58. Page 19, Part E.2, Table – Remove the requirement to monitor Oil and Grease (O&G). There is no basis to monitor for O&G at the nearshore monitoring stations.

Delete “water current” and “turbidity” from footnote #1. Water current and turbidity are not monitored under the visual observation requirement in the current NPDES permit.

Modify footnote #3 to read “The parameter shall be measured on a CDP basis, from within 1 meter below the surface to within 2 meters above the ocean floor at 1 meter intervals.”

Modify footnote #4 to read “sample within 1 meter below the surface for the top grab sample” and “sample within 2 meters above the ocean floor for the bottom grab sample.” The reasons for these two changes is that given the wave motion and difficulty in securing the boat in place, it is difficult to deploy the CTD equipment to measure exactly one meter from the water surface and two meters from the bottom of the ocean floor.

Modify footnote #5 to indicate the current approved membrane filter test method is the 2009 version (Method 1600: Enterococci in Water by Membrane Filtration Using membrane-Enterococcus Indoxyl- β -D-Glucoside Agar (mEI), EPA-821-R-09-016.

Add footnote #6 for enterococcus that samples shall be collected at each nearshore station within 1 meter below the surface and within 2 meters above the ocean floor.

Response: See response to comment 57.

59. Page 19, Part E.2 – Delete last paragraph which starts with “Monitoring results shall...” Reporting requirements for nearshore water quality monitoring are listed in the table on Page 50.

Response: See response to comment 57.

60. Page 20, 1st table – Latitude and longitude coordinates for Offshore Water Quality Monitoring has been rounded and do not include the nearest 10th decimal place. See Appendix B.

Response: The coordinates were revised as requested.

61. Page 20 – 1st table – Delete ZID stations HB2, HB3, HB4, HB5 and HZ from the table. Only ZOM stations should be monitored to determine compliance with State water quality standards.

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Response: This section was revised to clarify that stations HB2, HB3, HB4, HB5 and HZ shall be monitored for dissolved oxygen, light extinction coefficient, turbidity, and oil and grease.

62. Page 20, 2nd table – Remove requirement to monitor Oil and Grease (O&G) in the receiving waters. There is no basis for monitoring O&G at the offshore monitoring stations.

Remove requirement to monitor LEC in the receiving waters. LEC monitoring is only required for a treatment plant that has been issued a 301(h) waiver NPDES permit.

Response: Although this permit is not considered a 301(h) modified permit, the facility has not been upgraded and does not achieve secondary treatment standards, as required by Section 301 of the Clean Water Act and defined in 40 CFR Part 133. Therefore requirements from the previous permit were retained.

63. Pages 20-21, 2nd table, Footnote 3 – Remove bottom depth sampling requirement for enterococcus. The bottom samples at the offshore stations are below the DOH supported 33 meter depth limit for recreational waters.

Response: HAR, Chapter 11-54 limits enterococcus through the whole water column. There are no provisions for depth.

64. Pages 20-21 – Monitoring should not be required at the Zone of Initial Dilution (ZID) monitoring stations, HB2, HB3, HB4, HB5 and HZ. Monitoring for State Water Quality Standards should be conducted at the boundary of the State-approved ZOM and beyond. Any requirement to monitor at the Zone of Initial Dilution (ZID) is not applicable.

Response: Although this permit is not considered a 301(h) modified permit, the facility has not been upgraded and does not achieve secondary treatment standards, as required by Section 301 of the Clean Water Act and defined in 40 CFR Part 133. However, the permit was revised such that only dissolved oxygen, light extinction coefficient, turbidity and oil and grease shall be measured at these sampling locations.

65. Page 21, Item 3, Table footnote – From footnote #1, delete “water current” and “turbidity.” Water current and turbidity are not monitored under the visual observation requirement in the current NPDES permit.

Modify footnote #2, to read “The parameter shall be measured on a CDP basis, from within 1 meter below the surface to within 2 meters above the ocean floor at 1 meter intervals.”

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Revise footnote #3 to read “Samples shall be collected at each station within 1 meter below the surface for the top grab sample and within 2 meters above the ocean floor for the bottom grab sample.” The reason for this change is that given the wave motion and difficulty in securing the boat in place, it is difficult to deploy the CTD equipment to measure exactly one meter from the water surface and two meters from the bottom of the ocean floor.

The current approved membrane filter test method is the 2009 version (Method 1600: Enterococci in Water by Membrane Filtration Using membrane-Enterococcus Indoxyl- β -D-Glucoside Agar (mEI), EPA-821-R-09-016.

Response: Under Footnote 1, turbidity was removed from the requirement however; water current water remains as it was required in the previous permit. Footnotes 2, 3 and 4 were revised as requested.

66. Page 21, Part E.3 – Insert a new paragraph following the footnote to the last table in Part E.3 with the following language: “Inability to conduct offshore monitoring due to inclement weather or hazardous conditions which may endanger the lives of the facility’s personnel shall not constitute a violation of this permit.”

Delete last paragraph which starts with “Monitoring results shall...” Reporting requirements for the offshore water quality monitoring are listed in the table on Page 50.

Response: The sentence regarding inability to conduct shoreline monitoring was included in the permit as requested. The last paragraph which starts with “Monitoring results shall...” shall remain as written because it further explains what is required in the DMR submittal in relation to this section.

67. Page 21, Part E.4 – Delete reference to nearshore monitoring since the stations listed in Part E.4 are offshore stations. Each station should be monitored in January, February and/or in March of each year.

Response: The reference to nearshore monitoring was deleted as requested. The sampling months were revised as requested.

68. Page 21, Part E.4, Table – Sediment is not available at stations HB1 and HB7 due to invasive algae growth at the bottom. Substitute the following locations for stations HB1 and HB7, respectively for sediment monitoring:

HB1': 21°16'57.1"N (Latitude)	157°59'20.2W (Longitude)
HB7': 21°15'24.5"N (Latitude)	158°02'56.0W (Longitude)

These stations may be relocated in the future should extensive invasive algae growth precluding sediment sampling occur.

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Response: The following language was added to this section: “The Permittee may relocate sediment monitoring locations in the event that site conditions preclude the collection of valid samples. When relocating sediment samples, the Permittee shall provide an explanation as to why the relocation was necessary.”

69. Page 23, Part E.4.a, Table – Correct errors in table (e.g. “2-methylphenanthrene” should be 1-methylphenanthrene” and “C1-Fluoranthene” should be “C1-Fluoranthenes/Pyrenes”).

Response: The parameter names were revised as requested.

70. Page 24, Part E.5, 1st paragraph – Revise the paragraph to state that the annual fish monitoring shall be monitored in January, February and/or March.

Response: The sampling months were revised as requested.

71. Page 25, Part E.5, 1st table – Rename Stations FR1-B and FR2-B to FR3 and FR4.

Response: The Stations shall remain FR1-B and FR2-B for historical purposes.

72. Page 27, Part 6, 1st paragraph – Add to the end of the paragraph: “Long term permanent stations should be utilized to make the results comparable.”

Response: The requested sentence was not added. It can be accomplished without a permit revision.

73. Page 27, Part 6, 2nd paragraph – Delete 2nd paragraph.

Starting in 1991, the City had reported annual quantitative monitoring or shallow-water marine communities inshore of the Barbers Point outfall that focuses on fish and coral community structure. This monitoring is designed to detect changes in these communities. The survey plan was approved by DOH (see Attachment E) and adequately addresses the requirements stated in the 1st paragraph.

This draft public notice permit is not a CWA Section 301(h) modified permit.

Response: Although the existing plan was previously approved, updates to the plan may be necessary since the original plan was developed over twenty years ago. Although this permit is not considered a 301(h) modified permit, the facility has not been upgraded and does not achieve secondary treatment standards, as required by Section 301 of the Clean Water Act and defined in 40 CFR Part 133.

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74. Page 27, Part 6, 3rd paragraph – Delete 3rd paragraph. Replace with “The Permittee shall submit a coral reef survey to DOH and EPA within five (5) years of the effective date of this permit.

Response: This paragraph shall remain as written to ensure that the study is completed within the duration of the permit and that DOH and/or EPA comments, if any, are considered during the planning stages.

75. Page 27, Part E, Item 7 – Delete the requirement for a ZOM Dilution Analysis Study (see comment # 23 for rationale).

Response: See response to comment 23.

76. Pages 28-29, Part E, Item 8 – The City requests that the submittal date for the Annual Receiving Water Monitoring report be June 30 of each year to coincide with the same proposed submittal date for the Wastewater Pollution Prevention Program Annual Report.

Response: The deadline was revised as requested.

77. Pages 28-29, Part E, Item 8, 1st paragraph – Delete 3rd sentence including all requirements listed under 8.a through 8.e. The requirements listed under 8.a through 8.e are covered elsewhere under the applicable monitoring programs of the draft permit.

Response: The requirements under Parts E.8.a - E.8.e shall remain for clarification purposes.

78. Page 29, Part 3, Item 9 – The listed documents are guidance documents and should not be mandated for use. Delete the first sentence and replace with “the following are recommended protocols and methods for sample collection and analyses. The permittee may use revised or new protocols or methods as they become available.”

Response: Part E.9 shall remain as written to ensure that the proper methods and protocols are followed. Permit requirements must be based on current documents to ensure that the general public has an opportunity to comment on permit conditions.

79. Page 31, Part F – Under the existing NPDES permit, the City submitted annual assessment reports by June 30 of the following year for the calendar year in review. As the annual assessment report will be replaced by the Wastewater Pollution Prevention Program Annual report, the City requests that June 30 deadline apply to this report.

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Response: The deadline was revised as requested.

80. Page 32, Part G, Item 4 – Delete the requirement to comply with urban area pretreatment requirements; these requirements apply to 301(h) permits only. Furthermore, the City prepared an Urban Area Pretreatment report for both the Sand Island WWTP and HWWTP. EPA concurred with the UAPP report's conclusion of eliminating local limits (see May 16, 2005 letter from EPA). There has been only one SIU for the HWWTP basin for a number of years now and there has been no evidence of toxic pollutant discharge directly attributed to any industrial user within the HWWTP tributary as there has been no new permittees discharging elevated levels of toxic pollutants/metals nor are there any increased loadings of such from any existing industrial user.

Response: Although this permit is not considered a 301(h) modified permit, the facility has not been upgraded and does not achieve secondary treatment standards, as required by Section 301 of the Clean Water Act and defined in 40 CFR Part 133. Therefore requirements from the previous permit were retained.

81. Page 34, Part G, Item 6 – The City requests that the annual report of pretreatment activities submittal deadline of February 28 be changed to March 31 to be consistent with the City's other NPDES permits with submittal deadlines of March 31.

Response: The deadline was revised to March 31 as requested.

82. Page 37, Part H.1a.(1)(a) – The City requests that H-Power be added as an acceptable sludge disposal option.

Response: The City is required to dispose of sludge in accordance with HAR, Chapters 11-58.1 and 11-62; and 40 CFR Parts 257, 258, and 503. H-Power may be an acceptable sludge disposal option if it meets all criteria in the regulations.

83. Page 42, Part H., Item f(2) – Add email notification as an acceptable means to notify the EPA Regional Sludge Coordinator and the Director of non-compliance that may seriously endanger public health or the environment.

Response: Because of the urgent nature of these kinds of situations, oral notifications are required.

84. Page 44, Part H, Item (8) – Delete Item (8) as the language is inapplicable to the HWWTP. The HWWTP does not operate under the permitting program for an individual NPDES permit or a NGPC.

Response: This permit is an individual NPDES permit and therefore this requirement remains valid.

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85. Page 45 – Add requirements for receiving fats, oils, and grease directly at the solids handling process similar to “2. Requirements for Receiving Sludge”. Add “3. Requirements for Receiving Fats, Oils, and Grease” with language identical to subparagraphs a., b., and C., substituting “fats, oils, and grease” for “sludge.” Substitute “solids handling process” for “digesters” per comment # 87. Remove “hailed from the Permittee’s other wastewater treatment plants” from subparagraph a. Direct introduction of fats, oils, and grease into the solids handling facilities of the Honouliuli WWTP minimizes disruption to the liquid-handling processes and allows greater treatment efficiency and odor control. Further, direct introduction of fats, oils, and grease to the solids handling process increases methane formation in anaerobic digesters for future energy co-generation and beneficial reuse.

Response: This request should have been submitted with the permit application. This type of modification cannot be included in the permit without giving the public an opportunity to comment on the modification.

86. Page 45, Part H.2.a – Change “anaerobic digesters” to “solids handling process.” The sludge blend tanks, which are directly upstream of the digesters, will receive sludge.

Response: The language was changed as requested.

87. Page 45, Part H.2.b – Change “digester” to solids handling process.” The sludge blend tanks, which are directly upstream of the digesters, will receive sludge.

Response: The language was changed as requested.

88. Page 46, Part I, Item 1.a – Delete items a.(1), a.(2) and replace with the following:

1. Schedule of Submission

a. Monitoring Programs

The permittee shall submit for approval the following to the Director within 90 calendar days from the effective date of this permit.

- (1) Effluent Monitoring program detailing the sampling requirements specified in Part A of this permit.
- (2) Receiving Water Monitoring Program detailing the sampling requirements in Part E of this permit.

The permittee shall address all comments regarding the monitoring programs to the Director’s satisfaction.

Delete the text “(3)” and the corresponding indentation.

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Response: This section shall remain as written. The suggested revisions are mainly based on writing style. The deadlines for the submissions of the plans also remain at 30 days since this is an existing facility that should already have plans in place.

89. Page 47, Part I, 2.a. – Delete Part I.2.a. The certification statement is mandated under the State DOH Standard Permit Conditions, Item 5.d.

Response: The inclusion of this requirement in the permit is standard because of its importance for self-reporting.

90. Page 47, Part I, 2.c.(2) – Delete Part I.2.c.(2). It is inappropriate to specify under Part I, “Reporting Requirements” that all effluent analyses shall be reported as total recoverable for metals. The appropriate location for this requirement is in the footnotes on Page 4. Add to footnote 11 the following: “Effluent analyses for metals shall be reported as total recoverable.”

Response: Both sections are appropriate for this language. It was also added to footnote 11 in the table under Part A.1 as requested.

91. Page 47, Part I, 2.c.(3) – Delete first sentence. “Monitoring results shall be reported on a Discharge Monitoring Report (DMR) form (EPA No. 3320-1).” This is covered in item e. on Page 49. Hardcopy submittal will be replaced by electronic submission by the Permittee, unless otherwise requested by the Director.

Response: These sections will remain as written.

92. Page 48, Part I, Item (4), last paragraph – Change last sentence of the last paragraph to read, “Analytical results below the laboratory’s MDL shall be reported as zero.”

Response: It is inappropriate to report analytical results below the laboratory’s MDL as zero.

93. Page 48, Part I, Item (5) – Delete this item. The City will typically indicate in the transmittal letter for the DMR when there is no discharge.

Response: This section shall remain because it requires that DMR be submitted even when there is no discharge.

94. Page 48, Part I, item (6) - Delete the 2nd and 3rd paragraphs because the monitoring data will be submitted electronically via the Internet through the WQX Web site.

Response: This section shall remain because EPA may direct the City to submit hardcopies of documents.

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95. Page 49, Item d – Remove item d. This language is already provided under the State DOH Standard NPDES Permit Conditions, Item 16.d.

Response: The inclusion of this requirement in the permit is standard because of its importance.

96. Page 49, Item e – Revise language as follows:

e. Submittal of DMR Monitoring Results

Monitoring results shall be reported on a Discharge Monitoring Report (DMR) form. DMRs should be submitted no later than the 28th day of the month following the completed reporting period.

Once eligible for electronic reporting, the Permittee shall submit DMRs electronically using either National NetDMR, a state instance of Net DMR, or a separate electronic discharge monitoring report (eDMR) system. Once a Permittee begins submitting DMRs electronically, it will no longer be required to submit hard copies of DMRs to the Director unless otherwise requested by the Director.

Response: This section shall remain as written for consistency with other permits.

97. Page 49, item f - Delete Discharge Monitoring Report from the Schedule of Submission. This requirement is set forth in the preceding item 6.e.

Revise Schedule of Submission to distinguish reports submitted solely to the Director, and not the CWA Compliance Office. SIU Compliance Status Report, Sludge/Biosolids Annual Report, and Pretreatment Annual Report are the only reports that are submitted to the CWA Compliance Office.

Change the submission deadline for the Pretreatment Annual Report from February 28th of each year to March 31 of each year. See comment # 81 for the rationale.

Change the submission deadline for the Receiving Water Monitoring Report and the Wastewater Pollution Prevention Program Annual Report from March 31st of each year to June 30th of each year. See comment # 76 for the rationale.

Delete the submittal schedule as it relates to the ZOM Dilution Analysis Study (also see comment #23 for the rationale to delete this requirement).

Response: This section shall remain as written except that the deadlines for the Pretreatment Annual Report, Receiving Water Monitoring Report and the Wastewater Pollution Prevention Program Annual report were revised as requested. See response to comment 23.

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98. Page 50, Part I, first paragraph – Delete the entire paragraph as the language is inapplicable to the HWWTP. The HWWTP does not operate under the permitting program for an individual NPDES permit or a NGPC.

Response: This permit is an individual NPDES permit and therefore this requirement remains valid.

99. Page 50, Part I, Table - Add another row below the “Shoreline” row for “Nearshore Water Quality Monitoring” with applicable requirements for the “Reporting Period” and “Report Due Date” columns.

Response: The section shall remain as written since nearshore water quality monitoring requirements were removed from the permit.

100. Page 50, Part I, item (2), below table and top of Page 51 – Delete language to submit receiving water monitoring data electronically as it is covered on Page 48, Part I, item (6), first paragraph.

Response: This language shall remain as written to emphasize that data used in the reports must also be submitted electronically along with the report.

101. Page 52, Item c.(1) – Add email to DOH, CWB as an acceptable means to submit a written non-compliance report.

Response: Email is not an acceptable reporting method for written non-compliance reports. Reports must be properly certified as required in Part I.2.a.

102. Page 53, Part I, Item 4 – Delete the entire section. It is reasonable to provide notification to the Director only when the event meets the condition under the NPDES Standard Condition 16.a.(1), (2), or (3). There is no reasonable basis otherwise for the Director to be informed of any other planned physical alterations or additions.

Response: This requirement shall remain to be consistent with other permits.

103. Part 53, Part I, Item 5 – Delete the entire section. The descriptions of types of samples do not belong in this section.

Response: This section shall remain to be consistent with other permits.

104. Page 54, Part J, Item 1 – Delete the last sentence, “Activities of this program...” Part F of the draft permit contains a list of the requirements for the annual report.

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Response: This requirement shall remain as written. This condition is separate from the requirements in Part F and is only required to be reported in the annual report if the facility must develop a program to promote operator certification.

105. Appendix 1 – Appendix 1 incorrectly lists Dichlorobenzene under the “Base/Neutrals Extractable” parameter. These three analytes (1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene) should be listed under the “Volatile Organics” parameter as 40 CFR 136 allows grab sampling under EPA method 625.

Response: The analytes (1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene) are listed as Base/Neutral Extractables in 40 CFR Part 136, Appendix A, Method 625, Table 1.

106. Include language that the latest applicable regulations, approved methodologies, etc. will supersede any outdated regulations, approved methodologies, etc. that are specified in this permit.

Response:

The language in this section remains as written. Permit requirements must be based on regulations that are in effect to ensure that the general public has an opportunity to comment on permit conditions.

Comments Received From Mr. James S. Kumagai

I am responding as a concerned citizen and taxpayer in the city and County of Honolulu, State of Hawaii, USA, to your notice of November 13, 2013, on the matter of the draft NPDES Permit for the Honouliuli Wastewater Treatment Plant. I am neither affiliated with the permittee in any way or form nor with any of the enforcing agencies. I am concerned with the outcome of the permit decisions as a private citizen who cares about the quality of our environment and one who must pay for, and bear the consequences of, any action or inaction on this matter.

While this response focuses on the permit for the Honouliuli Wastewater Treatment Plant discharges, my comments and recommendations are intended to be fundamental and applicable to all other point discharges on Oahu that may be subjected to similar requirements for ocean outfall discharges.

I am familiar with the environment issues and their history to the extent of my experience: (1) as a registered professional engineer in the State of Hawaii (PE-2977C) practicing in environmental engineering, (2) my academic background (BS 1962 University of Hawaii, MS 1965 Washington University St. Louis, PhD 1969 University of California Berkeley), (3) my specific work experience relevant to the present issues: (a) as the lead engineer for Sunn Low Tom and Hara Inc. as part of the team that developed the Water Quality Program for Oahu, 1969–1972, (b) as a NAUI certified

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(1971) SCUBA diver who actually observed first hand, the real world underwater end-of-pipe conditions at all of the ocean outfall disposal sites existing at that time, (c) as Deputy Director of Environmental Health at the DOH, 1975-1980, (4) as representative of the Hawaii Water Pollution Control Association appearing before the US Senate Subcommittee on Environmental Pollution (Senator Muskie, Chairman) of the Committee on Public Works, Ninety-Third Congress, March 18, 1974, to present testimony and support for amending the Federal Water Pollution Control Act Amendments of 1972 which later passed into law as Section 301H to the CWA, and finally as a practicing engineer in a variety of environmental engineering projects to this day.

There are several categories of effluent limits proposed that are objectionable for the following reasons. They are contrary to 1) science, 2) real word experience, and 3) the public interest. It is emphasized here that the effluent limits and their rationale and not the monitoring and reporting requirements that are objectionable.

It is recognized that the draft permit is an instrument of regulatory action under statutory authority. However, it should be acknowledged by all that the authority is obligated to serve the public interest. Regulations are a means to an end, and that end is environmental quality control holistically involving the land, air, water, and people. It is in this spirit that comments and recommendations are offered for consideration.

The objectionable categories in the proposed draft are the following in Part A. Effluent Limitations:

- A. Biochemical Oxygen Demand and Total Suspended Solids.
- B. Nutrients: ammonia.
- C. Chronic Toxicity for whole effluent toxicity using *T. Gratilla*.
- D. Chlordane, Dieldrin, DDT

In addition, the rationale for determining RPA (FACT SHEET D.2.c.(1)) by maximum effluent concentration in place of geometric means and exceedances of WQS is incorrect, notwithstanding its numerical expediency. That is not nature. That is not the real world. There is time and opportunity to get more data to sort out the complexities in the right way. In the end, we will all benefit from it.

Response: As stated in the fact sheet, the determination of reasonable potential is in accordance with EPA's TSD and HAR, Chapter 11-54.

APPLICABLE SCIENCE AND EXPERIENCE

A brief history of the environmental movement is reviewed here to define the context for the comments and recommendations presented here for consideration.

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The City and County of Honolulu adopted the Water Quality Program for Oahu (WQPO, 1972). The development of the program started in 1969 even before the passage of the PL92-500, or the Federal Water Pollution Control Amendments of 1972. Nevertheless, the public debate over the provisions of the law was well underway early in the decade of the 1960s. What emerged in the public forefront were the laws of ecology as aptly stated by Barry Commoner (1971).

1. Everything is connected to everything else
2. Everything must go somewhere.
3. Nature knows best.
4. There is no such thing as a free lunch.

The decade of the 1960s was action-packed for the country and for Hawaii. Following statehood in 1959 and the subsequent economic-boom and urban growth on Oahu, there were 45 individual wastewater treatment plants constructed on Oahu to treat the increased wastewater discharges resulting from a booming population. All effluent discharges went into inland streams and water bodies or into the nearshore coastal waters. Treatment systems were designed by the then "10-State Standards" of the Upper Mississippi River Basin.

The design and regulatory culture of that day was technology-based, i.e., build more treatment plants. Continue discharging effluent at least cost into the inland and nearshore waters of the island. It met all regulatory requirements and became a mindless routine. However, public concerns and outcry grew over the water quality impact of some of the discharges. The system was not working. There were already questions about the wisdom of continuing this wastewater treatment and disposal strategy into the future of Oahu, regardless of its compliance with the regulatory requirements of that day.

The City and County of Honolulu commissioned a team of consulting engineering firms in 1969 to develop of the Water Quality Program for Oahu to study the issues and recommend a plan for a program. What emerged immediately was the principle of discharging effluent where it would do the least harm to the environment or where it might do some good as in reclamation and reuse. Everything must go somewhere. In an island community with limited land resources and an ecosystem in the middle of the Pacific, the choice for the backbone of the water quality program was the deep ocean outfall disposal systems. Here, space, time, and energy are virtually unbounded for stabilization of wastewater discharges according to nature's way. Nature knows best. The ultimate boundary conditions of our ecosystem were seen to be limitless in contrast to those of the Continental USA.

Response: DOH acknowledges the commenter's discussion. The discussion does not appear to necessitate a response.

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Learn from experience: how WQPO resolved the major issue of the effluent discharges into Kaneohe Bay Kailua Bay, Pearl Harbor, and the greater Mamala Bay.

On the windward side of the island, in 1970, the discharges into Kaneohe Bay included the then MCBH flow of 1.0 mgd primary effluent and flows from City and County treatment plants at 2.5 mgd trickling filter effluent from Kaneohe STP and 0.1 mgd package aeration plant from Ahuimanu STP. There were already water quality problems noted in Kaneohe Bay with eutrophication and coral toxicity. WQPO determined from field monitoring studies and laboratory assays from biostimulation of selected primary producers and for toxicity on coral planulae. It was concluded that more treatment even to tertiary levels would not eliminate the risk of adverse impact on the local ecosystem. The recommendation was to divert the point discharges completely out of Kaneohe Bay and combine them with the diversion of the then shoreline outfall discharge from Kailua into the Mokapu outfall system extending far into the open coast regime. That is where space, time and energy were available to allow the progression of the stabilization process as nature knows best. That plan was the zero risk alternative for both Kaneohe Bay and for the shoreline coastal waters fronting Kailua Bay. More significantly, that plan represented a net positive environmental gain for the region.

On the leeward side of the island, in 1970, the City of Honolulu discharged raw sewage to the shallow nearshore waters off Sand Island. The remainder of the municipal wastewater on the lee side of island discharge sewage effluent from eight small individual treatment plants into Pearl Harbor through tributary freshwater streams. Except for the Sand Island and Pearl Harbor Naval base discharges, the WQPO recommended regionalizing the collection, treatment, and disposal of the remainder of the municipal wastewater flows through the Honouliuli WWTP and outfall system into the deep ocean regime, away from the sensitive ecosystems and recreational waters where it will do the least harm to the public health and the environment.

WQPO envisioned Honouliuli providing for adequate space, time, and energy to achieve maximum environmental gain for Oahu by water reclamation and reuse for agriculture and urban development to supplement the natural water system and to allow partnership with nature to stabilize wastewater discharges in the deep ocean regime as nature knows best.

The recommendation was to extend the outfall pipe as far out offshore into waters of 200 foot depth. That was the depth deemed to be the limit of feasibility for outfall construction at that time in 1970. Otherwise, the planning and design team would have gone even farther and deeper into the thermocline to ensure better conditions for submergence and stabilization of the effluent plume in the lower layer of the ocean. (With today's technology, outfall construction can go even deeper.)

Experience. The system has been working for several decades now. No problems have been discerned with water quality impairment or public health issues. Honouliuli

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has been discharging primary effluent through the ocean outfall. The underlying science focusing on space, time, and energy have led to less reliance of technology and more on nature, which means less consumption of fossil fuel derived energy consumption, less green-house gas emissions, and less cost. This is the future. This result is a much greater a net positive environmental gain. This is in keeping with the evolving national and international policy.

Response: DOH acknowledges the commenter's discussion. The discussion does not appear to necessitate a response.

BOD and TSS LIMITS: SECONDARY TREATMENT.

As stated in the FACT SHEET, the 2010 Consent Decree supersedes requirements in the draft permit. The milestone given for secondary treatment is June 1, 2024.

Recommendation:

Remove the tabulation of the secondary treatment effluent limits for BOD and TSS from the draft so there is no misunderstanding of the applicable limits. Include reference to the consent decree.

107. **Response:** The permit must contain secondary treatment requirements as required by Section 301 of the Clean Water Act and described in 40 CFR Part 133. The Consent Decree is a stand-alone document and should not be referenced in the permit since it allows for less than secondary treatment.

NUTRIENT LIMITS IN THE PERMIT: THERE IS NO FREE LUNCH.

Nutrient (ammonia) limit proposed in the draft permit will do nothing in water quality enhancement. Instead, it will harm the environment in the broader sense.

The problem may be with the regulatory artifacts of the nutrient standards. It is not a real environmental problem for us, but it can be made to become a problem artificially, or bureaucratically, as it appears to be the case here. For one thing, there is no real-world impairment of beneficial uses of the local, open coastal waters from ammonia or any of the nutrients. There is no scientific basis for imposing effluent limits for nitrogen, nitrate/nitrate and/or ammonia here.

Instead, it is forcing us to head in the direction of an self-inflicted environmental problem by imposing the effluent limits for ammonia as it is being proposed in the draft permit to force remedial action at added expense to solve a non-issue or to resolve an artifact of the regulatory system. More technology, means more fossil-fuel derived energy consumption, more green-house gas emission, and hence climate change and global warming.

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Fundamentally, nitrogen and other nutrients are essential for primary productivity in the coastal waters. For embayments as in Kaneohe Bay and Pearl Harbor, the problem was eutrophication. Kaneohe had an added problem of and coral toxicity. In the open coast regime, the ecosystem functions efficiently within the available limits of space, time, and energy. Primary productivity involves photosynthesis where sunlight is amply available for energy to drive the process. In a situation of limited sunlight in the deep ocean system at Honouliuli there is no photosynthesis, hence no eutrophication. Otherwise, photosynthesis utilizes carbon dioxide for synthesis and gives off free oxygen. Carbon dioxide now is receiving considerable attention nationally and internationally as a greenhouse gas leading to adverse climate change. Carbon dioxide uptake by primary producers is highly desirable for this purpose. Granted, the extent of primary productivity from nutrients from the discharges on Oahu may be relatively small in the global context, but in principle, it gives a net positive environmental outcome. Every little bit counts. In Principle, if we all did a little bit; we can do a lot. Nutrients in our open coastal waters in general will be good by promoting primary production with attendant reduction in greenhouse gas emissions consistent with national and international policy. It is unlikely that problems of eutrophication would ever occur in the open coast regime for Oahu as it could in an embayment, considering the scale of urbanization and population growth physically possible for Oahu.

The ultimate boundary condition for the open coast regime referred to here is best described in Mark Denny (2008) as two layered ocean stratified by stable thermocline derived from glacial water flow and tropical climate temperature giving turnover rates of the inner ocean layer on the order of 500 to 1000 years. The time scale is not hours, not days typical of technology, but centuries. That is not to say, that the advocacy here is to extend the disposal system to the middle of the Pacific. This characterization is made to show that for the open ocean disposal systems, space, time, and energy is virtually boundless for our island ecosystem, limited only by our ability to engineer the system cost-effectively. For all practical purposes, there are no physical limits to our boundary conditions for water quality management and we can rely on nature as a partner to the maximum extent feasible to give a net positive environmental gain.

On the contrary, imposing effluent limits for nutrients, nitrate+nitrite nitrogen and ammonia nitrogen will diminish or eliminate completely the positive environmental effects of primary productivity on green house gas emissions. Worse yet, we will be actually building a greenhouse gas manufacturing plant in the process of applying technology for treatment. Fossil fuel derived energy is typically needed to drive that technology with corresponding greenhouse gas emissions. With an activated sludge anoxic selector plant for nitrogen removals typically to nitrogen gas, there will also be a contribution of nitrous oxide which is produced in the biochemical pathway to the nitrogen end product (Wrigglesworth, 1997). Although likely to occur in small quantities, the global warming potential of nitrous oxide is significant, 310 times the carbon dioxide value! Even that little bit could have a significant impact. There is no free lunch in ecology.

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By comparison, it will cost nothing to remove the effluent limits as proposed from further consideration

For more complete treatise on the science of nutrients in the marine environment refer to Mark Denny (2008), and John Wigglesworth (1997) in the list of references at the end. Mark Denny's book is very readable. Wigglesworth is more technical but informative. In addition, to gain a better perspective of what the discharge conditions are like in the receiving waters, go out for an onsite visit and look.

Recommendation:

1. Remove the proposed ammonia effluent limits (and all other nutrient limits).
2. Design our management and regulatory system based on natural systems to control water quality impacts from effluent discharges in our coastal waters. Nature knows best.
3. Apply technology for effluent limits only as a last resort as necessary.
4. Emphasize monitoring in situ performance of nutrient concentrations and mass emissions in space and time and the corresponding indices of primary productivity.

Response: DOH is obligated to implement applicable water quality standards within NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. Further, as previously discussed in this response to comments, the effluent limitation for ammonia nitrogen is based on estimated current treatment performance, and costly facility upgrades are not expected to be necessary for the Permittee to comply. Applicable effluent limitations for ammonia nitrogen and nitrate + nitrite have been included in the proposed permit based on the requirements and HAR 11-54 and 11-55.

WHOLE EFFLUENT TOXICITY

The use of *T. Gratilla* should be discontinued and replaced by a more stable test organism. The results would always be suspect since the test organism appears to be overly sensitive to the test conditions beyond the parameters being tested.

Experience with the WQPO (1972) suffered the same predicament using oyster larvae and nehu. They were overly sensitive and simply confused the results. The issue was resolved by choosing damselfish and tilapia. Stickleback was also attempted to correlate mainland effluent results but there was an issue going outside of the local environment for the test organism or importing a non-native animal and risking escape to, and proliferating in, our environment.

Bioassays for toxicity are not deterministic procedures. They are probabilistic/stochastic, intended as indicators of risk or the odds of a toxic property being present. There are many uncertainties in interpretation. The analytical "noise" and resulting confusion are

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the distractions that could lead to more questions than answers. It is going too far away from the fundamental and the relevant

In any case, the in situ monitoring of the biological communities will be the necessary data/information for real-world decisions on adequacy or acceptance of the bioassays.

Recommendation:

Choose an alternative test organism that can cost-effectively satisfy the requirement for whole effluent toxicity.

Response: The use of *T. gratilla* is appropriate because it is a local species that has demonstrated sensitivity to toxicity present effluents discharged in Hawaii. The narrative toxicity limitation contained in HAR 11-54-4 requires all waters shall be free of substances attributable to domestic, industrial, or other controllable sources of pollutants, including: toxic substances at levels or in combinations sufficient to be toxic or harmful to human, animal, plant, or aquatic life. To evaluate compliance with this requirement, HAR 11-54-4(b) establishes the use of whole effluent toxicity testing. To ensure the protection of aquatic life from toxic substances, a species sensitive to toxicity should be selected. The use of a robust species does not ensure compliance with the narrative toxicity standard established in HAR 11-54. *T. gratilla*'s sensitivity to toxicity within effluents, combined with it being a local species, is exactly what makes the selection of *T. gratilla* appropriate for evaluating compliance with the applicable water quality standards. The use of *T. gratilla* is continued in the proposed permit.

CHLORDANE AND DIELDRIN

Chlordane, dieldrin and DDT are banned from use. Their residues in the environment come from past usage and they will persist in the environment well into the distant future.

Like the rest of the persistent synthetic organic chemicals, they will eventually permeate the earth's ecosphere following the second law of thermodynamics (entropy). DDT is an example that has been documented on a global basis. Chlordane, dieldrin, and DDT has been documented in our waterways and estuaries, and even in our drinking water supply. The pathways and transport kinetics are often unclear but the end result is certain. They are already present in our estuaries and streams where the fish and aquatic nurseries are. That is more of a public health threat and environmental concern than the effluent discharges under present consideration. Sadly, hardly any regulatory attention is being given to it. WQPO Work Area 3 report (1971) raised the red-flag decades ago by documenting their existence in the Pearl Harbor estuary from tributary streams.

It is likely that groundwater infiltration into the sewer is a source of chlordane, dieldrin and DDT concentrations. As such, they represent but a leakage from a larger pool of

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the chlorinated hydrocarbons that is the major contributor of contaminants into our coastal environment. They will naturally permeate the nearshore coastal waters and eventually the offshore waters. Ultimately, chlordane, dieldrin and DDT will reach equilibrium in concentration uniformly over space according to the second law of thermo. It may degrade in time in the distant future well beyond the half life of the compounds.

Given the observed mass emissions rates of chlordane, dieldrin and DDT in sewage, that leakage is small and insignificant by comparison to the pool based on their mass applied on land over the years. Placing effluent limits on them would only incur cost in an attempting to remove a drop-in-the-bucket and transferring it somewhere else in the environment where it might do still more harm. It must go somewhere.

It is more important to assure through monitoring that no new sources of contamination are contributing and that there are no “hotspots” in the environment that require local remedial action to safeguard public health.

Recommendation:

Remove the effluent limits for chlordane, dieldrin and DDT but leave the monitoring and reporting requirements in place.

Response: DOH is obligated to implement applicable water quality standards within NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. HAR 11-54, 11-55, the STCP, or applicable federal regulations do not provide an exception for legacy pollutants within the Permittee’s effluent.

WHERE DO WE GO FROM HERE? BACK TO THE FUTURE

The federal initiative is to upgrade standards and press for ever more stringency in permit conditions. The intention is well meant, but it appears to be creating an ever more complex system to regulate and administer. The danger is getting mired in attempts to sort out the complexities of the means while ignoring the ends.

Historically, after the passage of NEPA in 1969, the environmental laws for air, water, drinking water, hazardous materials, toxic substances, etc. were passed in rapid succession piecemeal by Congress at different times, by different committees, following different environmental criteria, while all professing to be for the good of public health and the environment. The result is a fragmented set of environmental programs, although each being well intentioned.

Imposing the effluent limits is a case in point. It appears short sighted and operating in a silo. At the very outset of the environmental ground-swell in the 1960s, many argued for a holistic approach. Barry Commoner’s laws of ecology is a classic result. The creation of a single federal agency to bring all the programs under one roof was once

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thought to be a way to overcome the effects of fragmentation in the environmental programs. The idea of the unity of nature was also brought out in the announcement of the then President Nixon when the US EPA was formed in 1970. The President said..."Despite its complexity, for pollution control purposes the environment must be perceived as a single related system." He went on to announce, "A far more effective approach to pollution control would identify pollutants; trace them through the entire ecological chain, observing and recording changes in form as they occur; determine interactions among forms of pollution; (and) identify where on the ecological chain interdiction would be most appropriate." (Ruckelshaus, 1985)

Instead, things got even more complex as time went on. We now have a mixed bag of issues involving science and the law. It appears we have lost sight of our real environmental goals and objectives. The idea of coordination through a single agency at the federal level has not been happening. Instead, Ruckelshaus (1985), the first Administrator of the newly formed US EPA under President Nixon, in hindsight, recommended taking Rene Dubos' suggestion to heart in resolving the environmental complexity by:

"Thinking globally, acting locally."

Case in point: Nutrient limits. We cannot apply Continental USA solutions to environmental problems to Hawaii. We must act locally to deal with our own issues. Another case in point: secondary treatment for our deep ocean outfall discharges. The corollary is to say one-size-fits-all approach does not work for the environmental issues remaining for our future. Maybe at one time it did, but not anymore. Centralized administration of programs obviously does not, and cannot, respond to the reality of this world of diverse ecosystems and cultures. The only way to deal with the real world is to think globally but acting locally. The goals and objectives of the federal and state legislation for environmental quality are not compromised at all by doing so. It is time that we go back to advocacy of the early initiators of the country's environmental movement. That is, going back to the future.

Recommendation:

1. Do it.
2. Keep it simple and relevant.
3. Think globally, act locally.
4. Revise the effluent limits and regulatory procedures to serve our own local needs for our own island ecosystem and culture.

Response: DOH is obligated to implement applicable water quality standards within NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. Further response to the commenter's opinion on environment solutions and current regulations are outside the scope of this response to comments.

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Comments received from Mr. Roy K. Abe, P.E.

My name is Roy Abe and I am a licensed civil engineer in Hawaii with approximately 33 years of consulting experience in the wastewater treatment and water quality field. I would like to take this opportunity to comment on the draft Honouliuli Wastewater Treatment Plant (HWWTP) NPDES permit as a concerned private citizen and taxpayer.

I am employed by the Honolulu office of HDR Engineering, Inc. My educational background includes a B.S. degree in civil engineering from the University of Hawaii, and a M.S. degree in civil and environmental engineering from the University of California at Berkeley. My area of expertise is sanitary engineering, and I have had to the opportunity to work on the planning and design of many wastewater treatment plants, including several employing nutrient removal and tertiary treatment processes. I have provided engineering services for City and County of Honolulu (CCH), including an initial review of the pre-draft permit for the HWWTP. I am not presently involved in review of the current draft permit for CCH. The comments provided herein are my own.

While I am somewhat familiar with the HWWTP and the outfall to which it discharges, my intent is not to comment on the specific calculations used to derive the proposed effluent limits. My comments are primarily intended to provide some insight on the original intent of the DOH Chapter 11-54 water quality standards (WQS) and some of the scientific and “common sense” factors that should be considered. Hopefully this will provide justification for relaxing or eliminating some of the proposed limits that would otherwise cause considerable financial hardship and adverse environmental impacts with no significant water quality or health benefits.

My comments are as follows:

1. BOD and TSS (Page 3, Par. A.1) – The proposed 30 mg/L (monthly average) and 45 mg/L (average weekly) limits for BOD and TSS are confusing since no interim limits based on the Consent Decree appear to be included in the permit. Page 7 of the Fact Sheet state the following:

“The 2010 Consent Decree requires the Permittee to complete construction of facilities necessary to comply with secondary treatment standards by no later than June 1, 2024, and sets forth interim compliance milestones and interim effluent limitations for BOD₅ and TSS until the Facility achieves compliance with secondary treatment standards. The 2010 Consent Decree supersedes requirements in the draft permit.”

It is recommended that the 2010 Consent Decree limits be stated as interim limits in the permit to avoid confusion.

Response: The permit must contain secondary treatment requirements as required by Section 301 of the Clean Water Act and described in 40 CFR Part 133.

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The Consent Decree is a stand-alone document and should not be referenced in the permit since it allows for less than secondary treatment.

2. Chlordane and Dieldrin (Page 3, Par. A.1) – The proposed effluent limits of 0.076µg/L (annual average) and 0.58 µg/L (maximum daily) for Chlordane and 0.012 µg/L (annual average) and 0.27 µg/L (maximum daily) for Dieldrin should be eliminated. Chlordane and Dieldrin has been banned in the U.S. for about 25 years. Chlordane and Dieldrin are carcinogens and the lower limits in the WQS are based on possible carcinogenic effects from human consumption of fish containing the pesticide due to bioaccumulation in the food chain.

The Chlordane and Dieldrin found in the effluent is likely due to the pesticide leaching into the sewer system via groundwater infiltration. Past sampling of urban streams has shown highest levels of contamination when all the stream flow was from groundwater discharge. Chlordane and Dieldrin contaminated groundwater infiltrating via sewer pipe defects are likely to be the primary source of these chemicals. Since the chemicals are relatively insoluble and binds readily to soil particles, contaminated soil infiltrating through defects in service lateral lines located in pesticide treated soil may be an added source of Chlordane and Dieldrin during heavy rainfall. Cast iron and clay pipe lateral sewers servicing older homes in areas which experience high rainfall, corrosive soils and ground settlement often exhibit holes, separated joints, and other structural defects.

Removal of Chlordane and Dieldrin through conventional treatment processes is difficult and likely to be ineffective. Specialized treatment processes would be very costly and are likely to have no direct public health benefits. Rehabilitation of sewer lines to reduce infiltration and minimize entry of Chlordane and Dieldrin to the sewer system would be a more logical corrective action than implementing treatment to remove the pesticide from the wastewater. The extent of infiltration that can be removed from the collection system, however, is uncertain.

There is no evidence that Chlordane and Dieldrin bioaccumulates in the marine life at or near the outfall. It is highly unlikely that substantial bioaccumulation is occurring in the marine life at the outfall due to strong and varying currents that dilute and transport the trace amounts of the chemicals. Unlike river discharges, which consistently flow in the same general direction, currents in the open ocean constantly change directions in a largely unconfined environment. If bioaccumulation did occur in certain fishes congregating near the outfall, it is unlikely that sufficient amounts of these fishes would be caught and consumed to have a noticeable carcinogenic effect. In the unlikely event that affected fishes were proven to be a health concern, a more cost effective mitigative measure would be to simply discourage fishing near the outfall. Simply delineating the limits of the ZOM with buoys to indicate the location of the outfall would likely discourage fishing in the area. Knowledge of the outfall location would probably be appreciated by the public.

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Since Chlordane and Dieldrin may be present in groundwater that discharges to streams and nearshore waters, bioaccumulation in fishes caught in nearshore waters with limited circulation, such as bays and coastal Hawaiian fishponds, would appear to pose a greater health concern. In past studies (see <http://www.epa.gov/region9/water/npdes/pdf/sand-island/SI-appl-appxD-chlordane-dieldrin.pdf>) for the Sand Island WWTP basin, the chemicals were found in urban streams at higher levels than the wastewater collection system. The highest level of Dieldrin measured in streams was about twice the highest level found in the wastewater collection system. The studies also indicated that the maximum level of Chlordane found in stream sediments was 600 times the maximum level found in ocean sediments. It was suspected that the Chlordane found in the sediments within the Sand Island zone of mixing may have been caused by Chlordane bound to grit and sludge discharged through the outfall between 1976 and 1979 prior to completion of the Sand Island solids handling facilities.

It might be argued that the dispersal of trace amounts of Chlordane and Dieldrin far offshore via sewer infiltration and the outfall could potentially be a benefit by reducing discharge of the carcinogens in nearshore waters where bioaccumulation is much more likely to occur.

There also appears to be a lack of justification for establishing the Chlordane and Dieldrin effluent limits based on the RPA analysis described in the Fact Sheet. The RPA is based on the maximum effluent concentration of only five samples. The human health limits for the pesticides are based on average long-term exposure through fish consumption. It is not clear why the RPA is based on projecting the receiving water concentrations using the maximum recorded effluent concentrations. The maximum recorded effluent concentrations would clearly not be expected to be representative of long-term average effluent concentrations.

Similar arguments presented above for Chlordane and Dieldrin would be expected to be applicable to DDT.

Response: DOH is obligated to implement applicable water quality standards within NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. HAR 11-54, 11-55, the STCP, or applicable federal regulations do not provide an exception for legacy pollutants within the Permittee's effluent.

3. Enterococci (Page 3, Par. A.1) – The proposed effluent enterococci limits of 5,040 CFU/100 mL (average monthly) and 72,144 CFU/100 mL (maximum daily) should be eliminated. The proposed interim effluent limits of 898,087 CFU/100mL (monthly geometric mean) and 1,155,089 CFU/100mL (single sample maximum) should also be eliminated, or at least increased to reflect higher limits to facilitate compliance without major upgrade of the disinfection facilities.

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A costly upgrade of the disinfection system to lower enterococci levels should be justified by presenting data showing that water quality violations are occurring and that the violations can be attributed to the discharge. Expenditure of funds for effluent disinfection would provide little measurable benefit and waste funds that could be used for more effective public health protection actions.

Both enterococci concentrations and outfall dilution factors can vary considerably. The assumption that the maximum enterococci concentration and minimum dilution occurs at the same time is overly conservative. Furthermore, there may be enterococci die-off occurring during transmission of the flow from the HWWTP to the zone just outside the outfall diffuser ports. Exposure of the enterococci in the effluent to rapid changes in osmotic pressure from differences in salinity of the HWWTP effluent and saline seawater would tend to promote some enterococci die-off. It would appear that additional monitoring and statistical analysis of the data to support the proposed enterococci limits is justified.

Response: DOH is obligated to implement applicable water quality standards within NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. The discharge consists of treated sewage which may contain pathogens at elevated concentrations if not properly disinfected, sufficient to impact human health or the beneficial uses of the receiving water. Consistent with 3.3 of EPA's TSD, the regulatory authority should consider additional information discussed under Section 3.2 (i.e., type of industry, type of POTW, type of receiving water and designated uses, etc.) when evaluating reasonable potential. Reasonable potential can be determined without effluent or receiving water exceedances of applicable water quality criteria. Because the facility is a POTW, and pathogens are characteristic of treated municipal wastewater, and the beneficial uses of the receiving water include recreation where human contact may occur, reasonable potential for enterococcus has been determined. To ensure the protection of human health, this permit establishes effluent limitations for enterococcus.

HAR, Section 11-54-8(b) establishes water quality objectives for marine recreational waters within 300 meters (1,000 feet) of shore. As discussed in Part E.3.a of the Fact Sheet, the proposed permit establishes receiving water limitations for marine recreational waters within 300 meters (1,000 feet) from shore based on State regulations contained in HAR, Chapter 11-54. Federal regulations at 40 CFR 131.41(c)(2) establish water quality standards for bacteria in marine waters beyond 300 meters from shore, based on CWA Section 304(a). 40 CFR 122.44(d)(1)(vi)(B) states that where a State has not established a water quality criterion for a specific pollutant with reasonable potential, the permitting authority must establish effluent limitations on a case-by-case basis, using EPA's water quality criteria published under Section 304(a) of the CWA. Since Outfall Serial No. 001 is beyond 300 meters (1,000 feet) off shore, there is no applicable State water quality objective

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for the discharge, and EPA's criteria for enterococcus specified in 40 CFR 131.41 is applicable.

As described in the fact sheet, the use of a minimum initial dilution of 144:1 was used to calculate the proposed effluent limitations for enterococcus. Although human contact with the receiving water may be infrequent, human contact within the zone of mixing may occur, thus for the protection of human health due to the potential for acute illness from pathogens the initial dilution was determined to be appropriate. The use of the initial dilution is intended to be protective of water quality standards, beneficial uses, and human health. Human health may be impacted from short term exposure to elevated concentrations of pathogens, thus the provided dilution must be conservative to account for all reasonable discharge scenarios. Further, the initial dilution used to calculate the proposed effluent limitation currently represents the only known dilution for the outfall.

The interim limits were established as part of a schedule of compliance because the City cannot immediately meet the enterococcus limitations. The interim limits are based on HWWTP's current performance and are effective until the deadline for HWWTP to meet secondary treatment standards.

Currently, the "simple ban of recreational activities in the vicinity of the outfall" is not a viable option, and results in an immediate impact on the beneficial uses of the receiving water, which include recreation.

4. Ammonia (Page 4, Par. A.1) – The proposed ammonia limit of 69.7 µg/L (single sample maximum) should be 69,700,000 µg/L based on the information presented on page 26 of the Fact Sheet. It is recommended that the ammonia limit be eliminated. Continued receiving water monitoring should be adequate to detect and evaluate adverse impacts from the discharge.

The use of a single sample maximum limit is not consistent with the intent and basis of the WQS. The basis of the standards is explained in the report, "Water Quality Program for Oahu with Special Emphasis on Waste Disposal, Final Report, Work Area 4, Water Quality Standards and Criteria," City and County of Honolulu, April 1972, prepared jointly by Engineering Science, Inc.; Sunn, Low Tom and Hara, Inc.; and Dillingham Corporation. An excerpt from this report is presented in Attachment No.1. The WQS clearly recognizes that measured water quality parameters will vary due to many factors and that high values will occur periodically.

Another important document that addresses the basis of the WQS is the 208 Plan report, "An Ecosystem Approach to Water Quality Standards, Report of the Technical Committee on Water Quality Standards," December 1, 1977, prepared by Department of Health, State of Hawaii. Relevant excerpts from the report are presented in Attachment No. 2. The report recommends obtaining sufficient samples taken over a year to be 95 percent confident that the measured geometric

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mean is within about 20 percent of the true geometric mean. The Fact Sheet does not discuss the adequacy of the data in meeting this confidence level.

Compliance with WQS and the need for additional treatment should be based on long term trends as well as evidence of adverse impacts. The Fact Sheet provides no evidence of adverse water quality or ecosystem impacts.

Due to development in the region, changes to the ambient water quality and background constituent levels are possible. The WQS was based on relatively small sampling data set that was obtained over 40 years ago. Comprehensive collection and analysis of new water quality data is long overdue. The WQS limits and pollution control strategies must be periodically reevaluated to include consideration of possible changes in background levels and the causes of the changes. There is a clear need to examine both the original data and current water quality conditions for the control and ZOM stations to evaluate whether any water quality degradation can be attributed to the outfall discharge. If water quality is being degraded by stormwater, pollution control funding should be focused on improving stormwater quality.

It is imperative to understand that our marine outfalls, current structure, bathymetry, and receiving water inhabitants and ecosystems differ from what is encountered in the continental U.S. The WQS are based monitoring and investigations conducted in the early 1970's as part of the previously mentioned Water Quality Program for Oahu. The deep ocean outfalls are designed to meet the WQS, and together with other water quality programs, have proven to be effective in protecting public health and the environment over the many decades since the WQS have been implemented.

Determinations of non-compliance and justification for any additional treatment must be based on analyses that are consistent with the statistical basis and intent of the WQS, which clearly recognizes that conditions can vary significantly in the natural environment. While application of standard accepted procedures used elsewhere may facilitate development of permit limits, application of a statistically invalid approach would not be beneficial to the public or the environment.

Removing nutrients as well as other constituents when it is not necessary is actually detrimental to the environment and is a heavy financial burden. Nutrient removal processes require significant additional infrastructure, funding, and expenditure of energy. Both capital and annual operating costs associated with new nutrient removal process would be significant. These funds could clearly be used for more effective environmental protection and enhancement projects.

Increased energy use would result in increased production of green house gases, which has grown to be a significant environmental concern. Since the environmental benefits would be negligible, the funds for nutrient removal would essentially be

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spent to harm the environment. There is clearly a dire need to revise and update the water pollution regulations to consider impacts on air quality and long-term sustainability.

Once objective of reducing ammonia in the discharge is to limit its conversion to nitrate + nitrite nitrogen in the receiving water and minimize the risk of excessive algal growth. There is no evidence of high receiving water nitrite + nitrite concentrations or excessive algal growth caused by the discharge from the outfall. It should be noted high algal concentrations, instead, tend to occur at the mouths of streams as a result of nutrients in storm water runoff. If any funds are to be expended, they should be directed to improving storm water quality, where at least some benefits may be realized.

Attachment No. 3 provides a brief summary of marine ecosystem monitoring work performed by University of Hawaii researchers. Although the summary was prepared in 2000, it provides a good synopsis of the intensive biological monitoring that has been performed and the lack of adverse impacts. Monitoring to evaluate compliance with WQS limits is helpful, but these in-depth studies present a more accurate picture of actual impacts, or in this case, the absence of impacts. Hawaii's very stringent WQS were focused on protecting sensitive tropical reef systems and the results of extensive monitorings and research work verifies that the deep ocean effluent discharges are not contributing to degradation of the sensitive ecosystems.

Response: DOH is obligated to implement applicable water quality standards within NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. Further, as previously discussed in this response to comments, the effluent limitations for ammonia nitrogen is based on estimated current treatment performance, and costly facility upgrades are not expected to be necessary for the Permittee to comply. Applicable effluent limitations for ammonia nitrogen have been included in the proposed permit based on the requirements and HAR 11-54 and 11-55.

The fact sheet provides a comparison of annual geometric means to applicable water quality standards. Annual geometric means represent a reasonable period to observed season variations within the receiving water, and determine negative impacts on the receiving water (exceeding water quality standards at the edge of the ZOM). Comments regarding the water quality standards are outside the scope of this response to comments, and are appropriate during revisions of the water quality standards.

The use of a single sample maximum in the proposed permit is based on observed facility performance, and is being applied to maintain the current treatment performance demonstrated by the Permittee over the last several years to minimize the potential for additional exceedances of water quality standards at the edge of the

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ZOM. Because an applicable dilution is not currently known for the edge of the ZOM, water quality-based effluent limitations using a dilution and water quality criteria cannot be calculated. A requirement to evaluate dilution and assimilative capacity has been established in the permit, and may be used during future permitting efforts to calculate appropriate end-of-pipe effluent limitations. Until that information is available, maintaining current treatment capabilities, and evaluating compliance at the edge of the ZOM is reasonable to protect water quality and implement water quality standards without establishing direct end-of-pipe effluent limitations for ZOM parameters without dilution (since one is not known), or initial dilution (which may be overly stringent at the edge of the ZOM).

Response: DOH is obligated to implement applicable water quality standards within NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. Further, as previously discussed in this response to comments regarding ammonia nitrogen, the effluent limitations for nitrate + nitrite are based on estimated current treatment performance, and costly facility upgrades are not expected to be necessary for the Permittee to comply. Applicable effluent limitations for nitrate + nitrite have been included in the proposed permit based on the requirements and HAR 11-54 and 11-55.

The use of a single sample maximum in the proposed permit is based on observed facility performance, and is being applied to maintain the current treatment performance demonstrated by the Permittee over the last several years to minimize the potential for additional exceedances of water quality standards at the edge of the ZOM. Because an applicable dilution is not currently known for the edge of the ZOM, water quality-based effluent limitations using a dilution and water quality criteria cannot be calculated. It is the responsibility of the Permittee to provide all relevant information during the permitting process. A requirement to evaluate dilution and assimilative capacity has been established in the permit, and may be used during future permitting efforts to calculate appropriate end-of-pipe effluent limitations. Until that information is available, maintaining current treatment capabilities, and evaluating compliance at the edge of the ZOM is reasonable to protect water quality and implement water quality standards without establishing direct end-of-pipe effluent limitations for ZOM parameters without dilution (since one is not known), or initial dilution (which may be overly stringent at the edge of the ZOM).

5. Concluding Statements – It is recommended that a comprehensive water quality monitoring program be implemented to obtain updated water quality data. This would serve as the basis for preparing a much needed update to the WQS and also facilitate evaluation and verification of impacts from the various outfalls and nonpoint sources. The WQS should be revised to include detailed information on appropriate statistical analyses procedures to be used in analyzing monitoring data to ensure that the data is properly interpreted.

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Based on anecdotal input from others, it is my understanding that the criteria in the WQS were intended to be “attainable goals” reflecting what the water quality should be under an ideal situation. Much of the original monitoring was performed far offshore away from man-made influences with the intent of establishing water quality goals. These water quality goals were subsequently used to develop the WQS. They are now being utilized to develop unreasonable and unnecessary effluent limits using very rigid “one-size-fits-all” permit writing procedures. This is being done without consideration of the original intent of the standards, and without examining scientific data that shows no measurable adverse environmental or public health impacts.

There are significant consequences of imposing excessively stringent effluent limits without strong justification and comprehensive analyses of pollutant sources, water quality data, and ecosystem impacts. It will be difficult to relax the limits in the future despite availability of supporting data due to the anti-backsliding provisions. Furthermore, unreasonable effluent limits will only lead to an appeal and possible litigation that will further consume the limited manpower and financial resources of the stakeholders. It would be in the best interest of the stakeholders and the environment to defer establishment of the new effluent limits discussed above during this permit cycle.

I would urge the permit writers to keep an open mind, and take a scientific and common sense approach to developing effluent limits for the HWWTP and other treatment plants throughout the state. Please allow our utility agencies to direct limited financial resources to pollution and public health enhancement projects that will result in measurable benefits.

Response: Comment acknowledged.